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INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(51) International Patent Classification ⁶ : C07K 7/02	A1	(11) International Publication Number: WO 99/35164 (43) International Publication Date: 15 July 1999 (15.07.99)
(21) International Application Number: PCT/US99/00418 (22) International Filing Date: 8 January 1999 (08.01.99) (30) Priority Data: 60/070,879 9 January 1998 (09.01.98) US 60/091,705 3 July 1998 (03.07.98) US (71) Applicant (for all designated States except US): ARIZONA BOARD OF REGENTS, a body corporate, acting on behalf of ARIZONA STATE UNIVERSITY [US/US]; Tempe, AZ 85287 (US). (72) Inventors; and (75) Inventors/Applicants (for US only): PETTIT, George, R. [US/US]; 6232 Bret Hills Drive, Paradise Valley, AZ 85253 (US). PETTIT, Robin, K. [US/US]; Apartment B-2020, 9451 East Becker Lane, Scottsdale, AZ 85260 (US). (74) Agent: MYBECK, Richard, R.; Suite 10, 8010 East Morgan Trail, Scottsdale, AZ 85258 (US).		(81) Designated States: CA, JP, US, European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE). Published <i>With international search report.</i>
(54) Title: ANTI-CRYPTOCOCCAL PEPTIDES (57) Abstract Antifungals based on dolastatin 10 and four structural modifications thereof (herein "peptides") and methods of treating a host afflicted with a fungi-induced infection are herein described. In broth macrodilution assays, these peptides were fungicidal for ATCC strains and clinical isolates of <i>Cryptococcus neoformans</i> . Specificity for <i>C. neoformans</i> was also demonstrated in the solid-phase disk diffusion assay, and fungicidal activity confirmed in killing kinetics experiments. Broth macrodilution minimum inhibitory and minimum fungicidal concentrations for the most potent modification ranged from 0.0975–1.56 µg/ml, and 0.0975–6.24 µg/ml, respectively. The minimum inhibitory concentrations were nearly identical in the presence of human serum, but increased with lowered pH. Suitable dosage forms for use of the novel antifungals are also described.		

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INTERNATIONAL PRELIMINARY EXAMINATION REPORT

(PCT Article 36 and Rule 70)

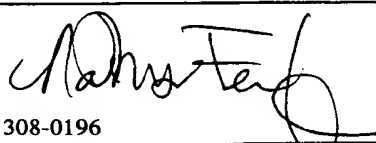
Applicant's or agent's file reference 5379-PCT	FOR FURTHER ACTION See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416)	
International application No. PCT/US99/00418	International filing date (day/month/year) 08 JANUARY 1999	Priority date (day/month/year) 09 JANUARY 1998
International Patent Classification (IPC) or national classification and IPC IPC(6): C07K 7/02 and US Cl.: 530/330		
Applicant ARIZONA BOARD OF REGENTS, a body corporate, acting on behalf of ARIZONA STATE UNIVERSITY		

1. This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 3 sheets.
☐ This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority. (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).

These annexes consist of a total of 0 sheets.

3. This report contains indications relating to the following items:

- I ☒ Basis of the report
- II ☐ Priority
- III ☐ Non-establishment of report with regard to novelty, inventive step or industrial applicability
- IV ☐ Lack of unity of invention
- V ☒ Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- VI ☐ Certain documents cited
- VII ☐ Certain defects in the international application
- VIII ☐ Certain observations on the international application

Date of submission of the demand 09 AUGUST 1999	Date of completion of this report 05 OCTOBER 1999
Name and mailing address of the IPEA/US Commissioner of Patents and Trademarks Box PCT Washington, D.C. 20231 Facsimile No. (703) 305-3230	Authorized officer DAVID LUKTON  Telephone No. (703) 308-0196

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/00418

I. Basis of the report

1. This report has been drawn on the basis of *(Substitute sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to the report since they do not contain amendments)*:

☒ the international application as originally filed.

☒ the description, pages 1-22 , as originally filed.

pages NONE , filed with the demand.

pages NONE , filed with the letter of _____.

pages _____ , filed with the letter of _____.

☒ the claims, Nos. 1-8 , as originally filed.

Nos. NONE , as amended under Article 19.

Nos. NONE , filed with the demand.

Nos. NONE , filed with the letter of _____.

Nos. _____ , filed with the letter of _____.

☒ the drawings, sheets/fig 1-3 , as originally filed.

sheets/fig NONE , filed with the demand.

sheets/fig NONE , filed with the letter of _____.

sheets/fig _____ , filed with the letter of _____.

2. The amendments have resulted in the cancellation of:

☒ the description, pages NONE .

☒ the claims, Nos. NONE .

☒ the drawings, sheets/fig NONE .

3. ☐ This report has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box Additional observations below (Rule 70.2(c)).

4. Additional observations, if necessary:

NONE

INTERNATIONAL PRELIMINARY EXAMINATION REPORT

International application No.

PCT/US99/00418

V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement**1. STATEMENT**

Novelty (N)	Claims <u>1-8</u>	YES
	Claims <u>NONE</u>	NO
Inventive Step (IS)	Claims <u>1-8</u>	YES
	Claims <u>NONE</u>	NO
Industrial Applicability (IA)	Claims <u>1-8</u>	YES
	Claims <u>NONE</u>	NO

2. CITATIONS AND EXPLANATIONS

Claims 1-8 meet the criteria set out in PCT Article 33(2)-(3), because the prior art does not teach or fairly suggest that the recited compounds can be used to treat fungi-induced infections.

Claims 1-8 meet the criteria set out in PCT Article 33(4), for industrial applicability.

----- NEW CITATIONS -----
NONE

PATENT COOPERATION TREATY

PCT

NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents
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 Office
 Box PCT
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in its capacity as elected Office

Date of mailing (day/month/year)

23 September 1999 (23.09.99)

International application No.

PCT/US99/00418

Applicant's or agent's file reference

5379-PCT

International filing date (day/month/year)

08 January 1999 (08.01.99)

Priority date (day/month/year)

09 January 1998 (09.01.98)

Applicant

PETTIT, George, R. et al

1. The designated Office is hereby notified of its election made:



in the demand filed with the International Preliminary Examining Authority on:

09 August 1999 (09.08.99)



in a notice effecting later election filed with the International Bureau on:

2. The election ☒ was

was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO
 34, chemin des Colombettes
 1211 Geneva 20, Switzerland

Facsimile No.: (41-22) 740.14.35

Authorized officer

Jean-Marie McAdams

Telephone No.: (41-22) 338.83.38

INTERNATIONAL SEARCH REPORT

International application No.
PCT/US99/00418

A. CLASSIFICATION OF SUBJECT MATTER

IPC(6) :C07K 7/02

US CL :530/330

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

U.S. : 530/330, 331; 514/17, 18

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

CAS Online, APS

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	US 5,663,149 A (PETTTT et al) 02 September 1997, see entire document.	1-8
A	US 5,635,483 A (PETTTT et al) 03 June 1997, see entire document.	1-8
A	US 5,599,902 A (PETTTT et al) 04 February 1997, see entire document.	1-8

☐ Further documents are listed in the continuation of Box C. ☐ See patent family annex.

* Special categories of cited documents:	*T* later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention
A document defining the general state of the art which is not considered to be of particular relevance	*X* document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone
E earlier document published on or after the international filing date	*Y* document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
L document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	*&* document member of the same patent family
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P document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search

26 MARCH 1999

Date of mailing of the international search report

12 APR 1999

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